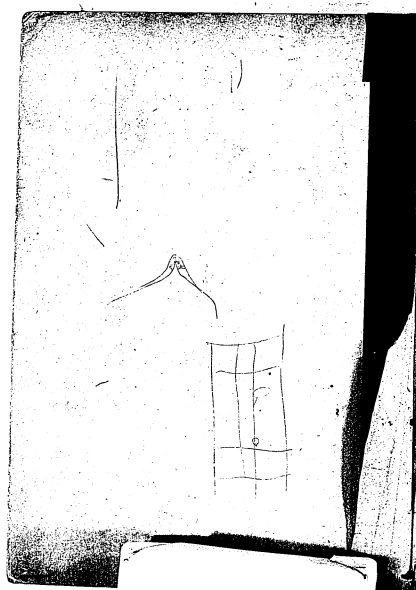
Menlo Park Notebook #30 [N-79-04-08.2]

This notebook covers the period April 1879-March 1880. The entries are by Edison, Charles Batchelor, Francis Upton, Ludwig Boehm, Francis Jehl, and John W. Lawson. Most of the book consists of drawings of lamps and vacuum pumps. Earlier entries include notes on metal and alloy tests; notes on telephone experiments; and notes and drawings by Edison on generators and conductors. On page 195 is a drawing by Upton, depicting the incandescent lamp as "the phoenix arising from the fires of the past." The book contains 236 numbered pages followed by 4 unnumbered pages.

Blank pages not filmed: 178-179, 196-197, 204-221, 224-231.

Missing page numbers: 1-2, 95-96, 121-122, 141-142, 147-152, 155-156, 183-188.



1030

April 8 1904

1 Call complaint on line

We find this morning that it is low probably due to loss of water. 9 Edison can hear Marconi reading 3 feet away but do not understand what is said yet can hear "Mary" sir plain, with induction coil in circuit it reduces it ½ in volume.

Zinc & in C.K. I hear nothing Batch hears something 10 yards off.

Silver nearly as good as platinum finish Coil out, but ½ as good with

Apl 8 1879

Ruthinium not so good as platinium
Calling Platinum 100. then Ru 65.

Bismuth C.P. — When 1st put on it is not so good as platina but after burning ½ a minute it gets harder & harder until it equals or nearly equals platinium we now put on Pt and find Bismuth is harder, the Mallet does not squeak while Pt does Bismuth is worn a little,

Cadmium, Bate's does not have a mortal sound

Chas Batchelor

Apl 8 1879

Cobalt, about same as platinum perhaps better than Pt with the coil in, squeaks less than Pt. not worn -

Arsenic about 80 to Pt 100 - squeaks a little

Antimony, about same as Pt - perhaps slightly less volume. Squeaks about like Pt.

Tellurium about 50 to Pt 100.

Aluminium about 20 to Pt 100 Squeaks fearfully.

Edward Hutchinson

Apl 8 1879

Thallium - Batch hears nothing

Iridium - about same as platina

Nickel 65 to Pt 100, Squeaks badly

Iron - Chem Pure. 55 to Pt 100

Chromium. Nothing at all.

Platinum Iridium alloy
Notes - good as platinum
Wrought-iron [illegible]
ascertain and find that it is
as good as Platinum

April 1. 1919

The Chalk is getting dry and uneven surface Platinum comes quite low so I can just hear him read but not to understand when the Cord is out -

Sulphide of Lead about 40 pc to Pt 100 -

Brass, about same as platina

Babbitt Metal Exceedingly low Batch just hears it, it appears to be as hard with cord in as out

Chas Butchart

12

Apl 8 1899

It got so dry, that we had to wet it
then Pt came out loud,

Magnesium - Batch means absolutely
nothing - current passes through
ok -

Gold - about 55 to Pt 100

German Di Puer works easier even
~~Dutch~~ with stringer pressure
about 75 to Pt 100

Di Sulphide Tin (magnesium) Very low,
Very Very very low low,

Charles Batchelder

14

Platinum

Apl 8 1919

We find German Silver to be slightly louder than Platinum on dryer chalk and a little louder on wetter chalk

Tin, low- very few I dont hear it 3 feet away

Note we find it very difficult to make comparable tests owing to drying of Chalk & from the [illegible], We now have put in Tin again but find it exactly [illegible]

Sincerely
Chas Batchelor

April 8 1899

Lead – Batch can scarcely hear it.

Copper – not so good as Platina.

Sulphide Copper
Phenomenal
– loud as Plat.
Try again

Carbon – [illegible]

Charpentier

Apl 8 1899

Will try without any battery on. no constant -

Platinum not so bright as with battery -

Zinc, about 60 to Pt-100

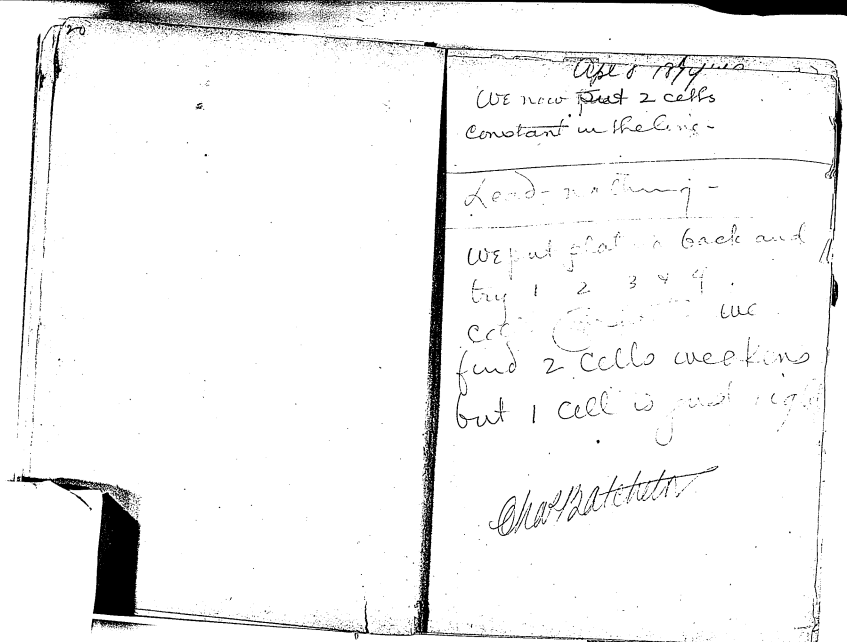
Tin - Low - about 20 to Pt 100

German Silver - about same as Platina -

Lead - Nothing

Charlotte

No need of further on this -



Apl 8th 1879 20

We now put in Chalk 2

3 oz Chalk
5 grs Acet Hg.
½ fluid oz Cinnam Aqua

Platina [illegible] -

With 2 cells [illegible] in primary and 1 cell in Aux permanently talking ~~not so~~ loud as on Nov 1878 to [illegible] I see no difference

The ordinary width of Chalk is best the ½ wide being the worst and there is apparently no difference between

April 8 1949

1/8 and 3/16 ~~Fiber~~

I turned off the roller perfectly smooth and started on the 5/8 but the result was the same

Think this button is equally as good as No 1 difference of 4 gm Mercury making no difference

Made No 3. button -

{ 30 gr Chalk
{ 1/2 fluid Na.C

With no Acet Hg but it is far inferior to 1+2. Low talking which no wetting will make as good as 1+2

Shot 3 Satisfactory

April 9 1879

We put in No 4 button

3 of Chalk
15 Grain Acet Hg
½ Fluidg Na O

This is very low indeed and not near so good as 1 & 2. Afterwards I wet it some but this did not improve it I tried German silver on this and it was just as good as Platinium We put this button by to dry out a little & try again

Made No 5 Button

3 of Chalk
25 grains Acet. Hg
½ Fluidg Na O

This is better than 4 but not good enough when wetted more it was worse

Chas Batchelor

Made No 6 Button —

{ 3 ℈ chalk
40 grams Acet. Hg
½ fluid ℈ Na O }

This gave nothing at first and made the magnets very weak by reason of being too dry I suppose, and putting too much resistance in the line — when wet it became a little better but is good for us as it is too soft + takes too much pressure with plenty of water + left to soak it up + came better but not quite as good as 1+2 Edison afterwards by continually spraying water afterwards brought this button as short he thought it equally as good as 1+2

No 7. Now putin No 7 - - - -

3ß Chalk
100 grs Acet Hg
3 fluid ß Na. O.

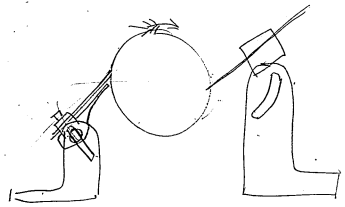
When we put this in at first it talked well but after wetting considerable it did appear so good. the excess of Hg seems to alter color of this to yellow

No 8.

3 ß Chalk
9 grs Acet Hg
3/4 fluid ß Na O

32

33



Experiments with the standard
Cymometer Machine - & new Cymometer
July 5 1879 - T A Edison -

Wright 929.-

I find that if you run the
sliding weight
point when the beam is
permanently down
a point nearer
common centre up the
weight will be the means of
placing the centre of the
I found it invariably balances
nearer that point than any
other,

2 - 50

42

21
4
29

3 & 28 1/2

229.
3
145

1-22 5

4 3/4 1/2

41

24

9 1/2

- 2 1/2

5.

6

125

43

1170
2
2 3 4 5
29 42
30 71

4 3/4
10

24,

2 1/2

26 1/2

28 3/4

256 - 2 1/2 lbs.

1 1/4.

30.

31 1/2 .1

15 3/4

weight 929 =

Speed 229 distribution with proxy

deflection with proxy on ~~3-1~~

924 - lbs of 929 weight 1 lb 4 1/2 oz on Lever, 20 inches out. Speed 2.5 main shaft. 188,

Result

Ours - 3088 ft lbs

Proxy 3070.

Another test.

Weight. 3 lbs scant - 20 inches out,

Original weight 929. - diff 13 1/4 lbs.

Speed 236

Result.

Ours 7990 -

Proxy 7102.

38

29 5 28 33

895 - 1/2 33

3 1/2

29 1/2 4.15

7162 (366:0 / 5:8:10) 5
7.2.46.0

31 1/2 33

94 1/2 16 1/2

16 1/2 7162 (36650 / 51810) 5
87.0.

29

16 1/2 15

13 3 13.9.

15

14 lbs 10 1/2 ozs

35

Undertake it again -

Difference - 12 1/2 lbs -

speed 238,

Result,

Ours 7540,

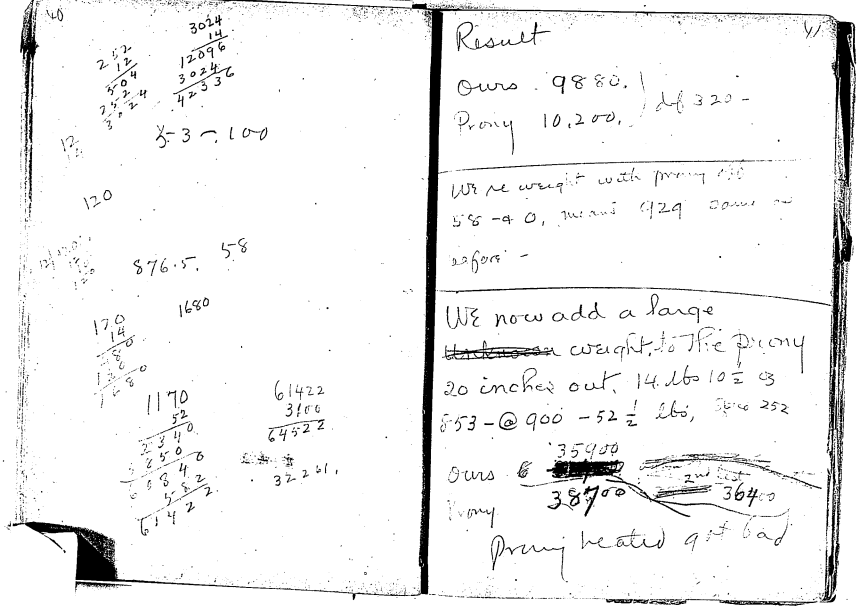
Proxy. 7162

We now add 1 lb & 1 oz more to the 3 lbs scant. on proxy -

Speed 240 - (895 - 1/2 929.

another 894 1/2 931 1/2) mean

912.62 - Lift 16.38,


Result
Ours 9880.
Proxy 10,200.
Δ 320 -
We weight with proxy 1/10
58 - 40, mean 429 ours
22 for -
We now add a large
20 inches out. 14 lbs 10½ oz
853 - @ 900 - 52½ lbs,
Ours
Proxy
Proxy heated a bit bad

46 - 95 1/2

1111 47

47 1/2 47 1/2 47 1/2

111 ÷

29 3 1/2

25

29

57 1/2

900 940 - 920

889 954 - 921 1/2

88 57 1/2 954 918.2

57 1/2

Over

1170

57 1/2

8190

5850

6669

5-8

6727

30

7027

35.135

100

888
956

11

-13

~~956~~

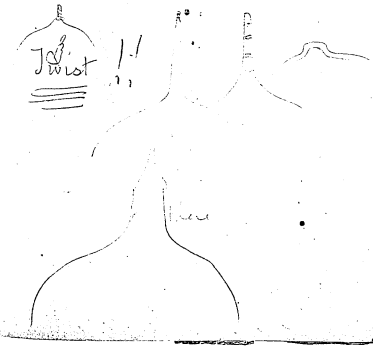
59

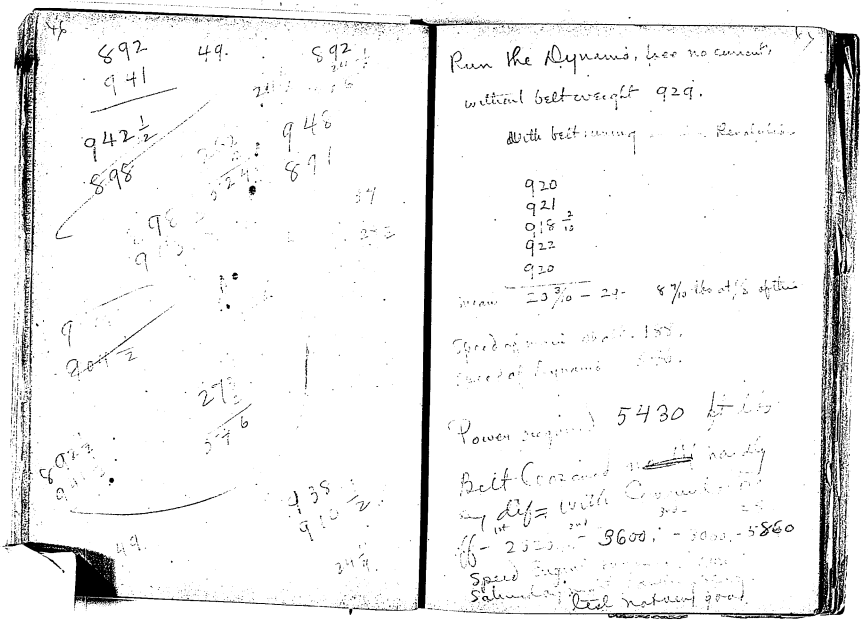
950
891

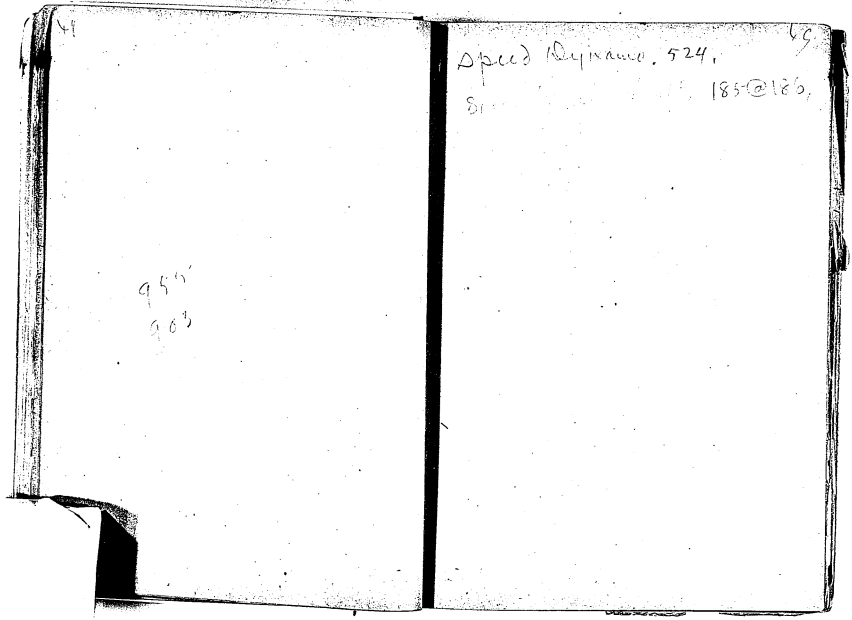
1170
49
1855 0
585 0
690 30
340 3
72 43 0.

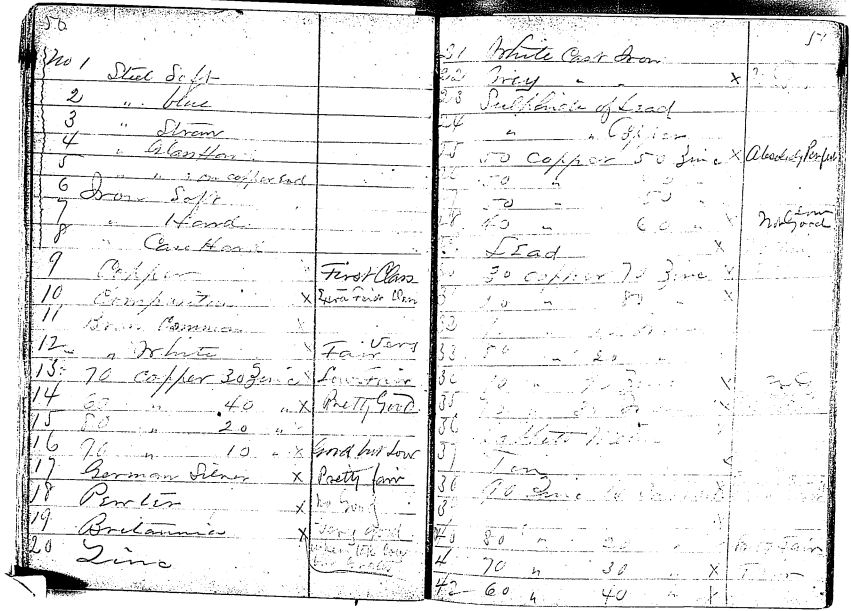
36215

920
921
918 2/13
922
920 2/2






Dried Quinine. 524.
185@186,
95°
90°



43	50 Zinc	50 Copper	X	NG
44	40	60	X	Fair
45	30	70	X	Fair
46	20	80	X	Fair
47	10	90	X	Pretty Good
48	Sulphide Zinc		X	NG
49	Mainly Metal 40% Cu			
50	10 Copper 90 Zinc			
51	80 " 20 Iron		X	Poor
52	30 " 70 Lead		X	Fair
53	" 10 "		X	Pretty Good
54	80 " 20 "		X	Very Poor
55	70 " 30 "		X	Fair
56	60 " 40 "		X	Fair
57	50 " 50 "		X	Just Ruling
58	40 " 60 "		X	Just rated Try 4.05
59	66 2/3 " 33 1/3 "		X	Fair
60	Metal 69 cm sl. Flux		X	Fair
61	Sulphide Iron			
62	60 Copper 40 antimony		X	Fair
63	50 " 50 "		X	

53

10 Copper 90 Columbium		X	
40 " 60 Antimony		X	Fair
30 " 70 "		X	NG
20 " 80 "		X	
70 " 30 "			
80 " 20 "			
90 " 10 "		X	Fair
10 " 90 Lead		X	Fair
20 " 80 "		X	
20 " 80 "		X	
60 " 40 Iron		X	
80 " 20 "			Fair
30 " 70 "			Fair
20 " 80 "		X	
10 " 90 "			Fair
1/2 Zinc 10 Antimony		X	
80 " 20 "			Fair
70 " 30 "		X	Fair
60 " 40 "		X	Fair Gas
50 " 50 "			NG

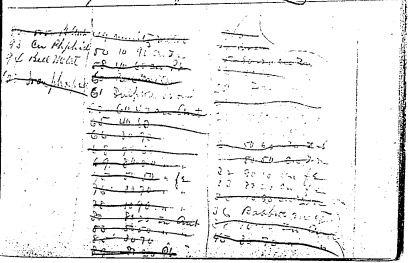
43	50	Zinc 50 Copper	X	NG
44	40	60	X	Fair
45	30	70	X	Fresh Cut
46	20	80	X	Fair
47	10	90	X	Pretty Good
48	Sulphide Zinc		X	NG
49	Mainly Metal	40 Zinc 60 Cu		
50	10 Copper 90 Zinc			
51	80 "	20 Iron	X	Poor
52	30 "	70 Zinc	X	Fair
53	"	10 "	X	Pretty Good
54	80 "	20 "	X	Very Poor
55	70 "	80 "		
56	60 "	40 "	X	
57	50 "	50 "	X	Pretty Fresh Rock
58	40	60 "		Tr $4.05
59	66 2/3 "	33 1/3 "	X	
60	Coal Mine	69 and 31 Flux	X	Fair
61	Sulphide Iron			
62	60 Copper	40 antimony	X	Fair
63	50 "	50 "	X	

64	10 Copper	90 Calcium	X	
65	40 "	60 Antimony	X	Fair
66	30 "	70 "	X	NG
67	20 "	80 "	X	
68	70 "	30 "		
69	80 "	20 "		
70	90 "	10 "	X	Fresh Rock
71	10 "	90 Lead	X	Fair
72	20 "	80 "	X	
73	30 "	70 "	X	
74	50 "	40 Iron	X	
75	50 "	50 "		Fair
76	30 "	70 "		Fair
77	20 "	80 "	X	
78	10 "	90 "		Fair
79	Zinc 10	Antimony	X	
80	80 "	20 "		Fair
81	70 "	30 "	X	Fair
82	60 "	40 "	X	Fresh Rock
83	50 "	50 "		NG

53

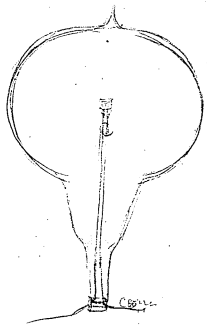
84	40 Tin 60 Antimony	X	Poor Good
85	30 " 70 "	X	Poor
86	10 " 90 "	X	Good
87	20 " 80 "	X	No test
88	90 Lead 10 "	X	Part T
89	80 " 20 "	X	
90	70 " 30 "	X	
91	60 " 40 "	X	
92	50 " 50 "	X	
93	Iron Phosphide		
94	Rose Metal 78 Bi 22 Tin		
95	Mineity Metal 56 Cu 43 1/2 Zn 3 1/4 Pb	X	Pretty good
96	10 Lead 90 Antimony	X	
97	20 " 80 "	X	Poor
98	30 " 70 "	X	Pretty Poor
99	40 " 60 "	X	Antimony
100	Rose Metal 40 Pb 60 Tin 100 Bi	X	MS
101	Lead Phosphide	X	
102	Tin Phosphide - Good many Lumps	X	

103	Iron Phosphide		
104	Copper & Tin Sulphides Equal	X	Poor Poor
105	Nickel Sulphide	X	Poor
106	50 Lead 50 Cadmium	X	MS
107	50 " 50 "	X	MS
108	10 Lead 90 Cadmium	X	MS
109	60 " 40 "	X	Good
110	80 " 20 "	X	
111	40 " 60 "	X	MS
112	" " "	X	MS
113	Phosphide of Antimony	X	MS

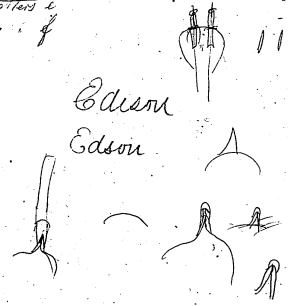


114	Pure Silica
115	Eglinus
116	Bismuthite
117	Cadmium
118	Tungsten
119	Cy. Hydrogen
120	Cyanide Barium
121	Carbonate of Soda
122	Barium
123	Phosphate of Lead
124	Carbonate Copper
125	[illegible]
126	[illegible]
127	Lead [illegible]
128	[illegible]
129	Nitrate [illegible]
130	[illegible]
131	Nickel
132	Lawrencium No 2
133	Zinc

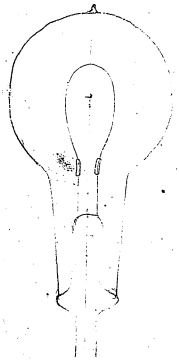
134	For Hydrate
135	[illegible]
136	Iridium
137	Selenium
138	Carbonate of
139	Cyanide of
140	Red Iron Ore
141	[illegible]
142	
143	
144	
145	
146	
147	
148	
149	
150	
151	
152	

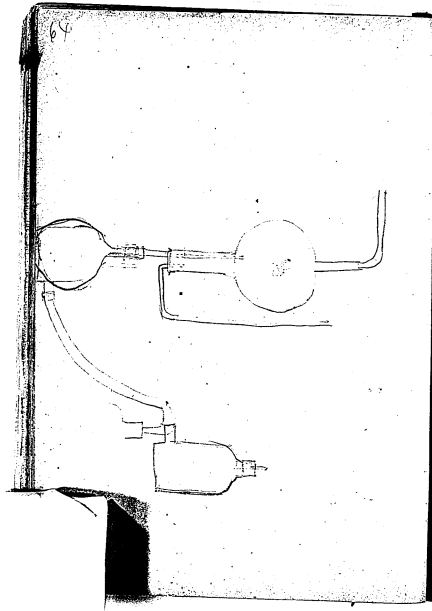


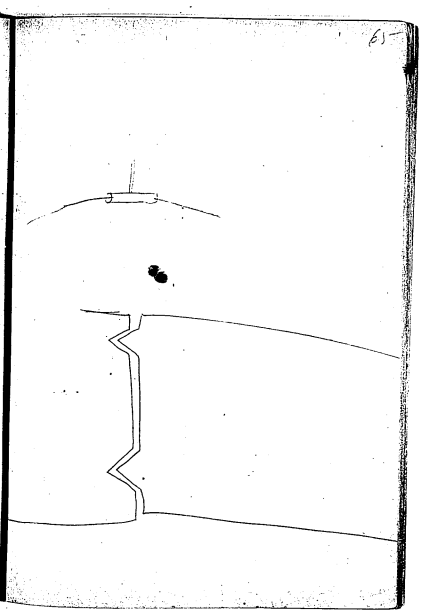
Letters b numbers 2 sewn medal 3
" d " 4
Tissue needles missing
Paper missing matter
Letters c " 5
" f



a No 50 Le Roy & Otis Tube (needles).
b " 51 Nos 53 & 54 Bottles given to Washington

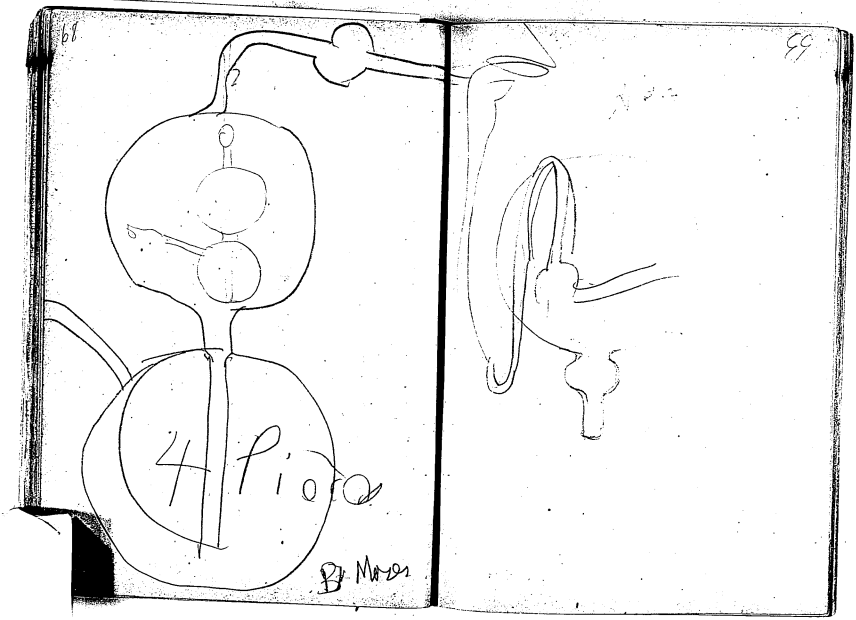


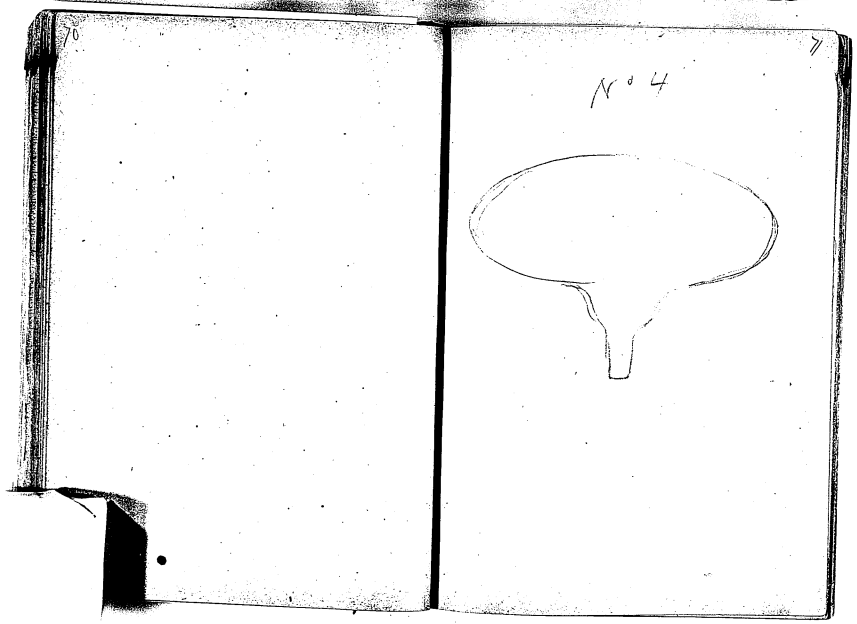




N° 1

N° 2


4 Pi o
B. Mayo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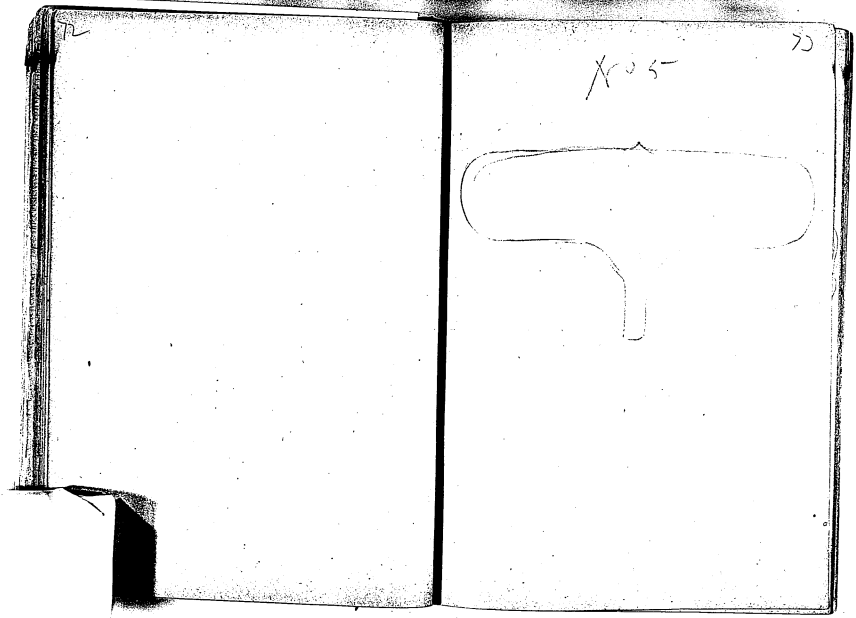
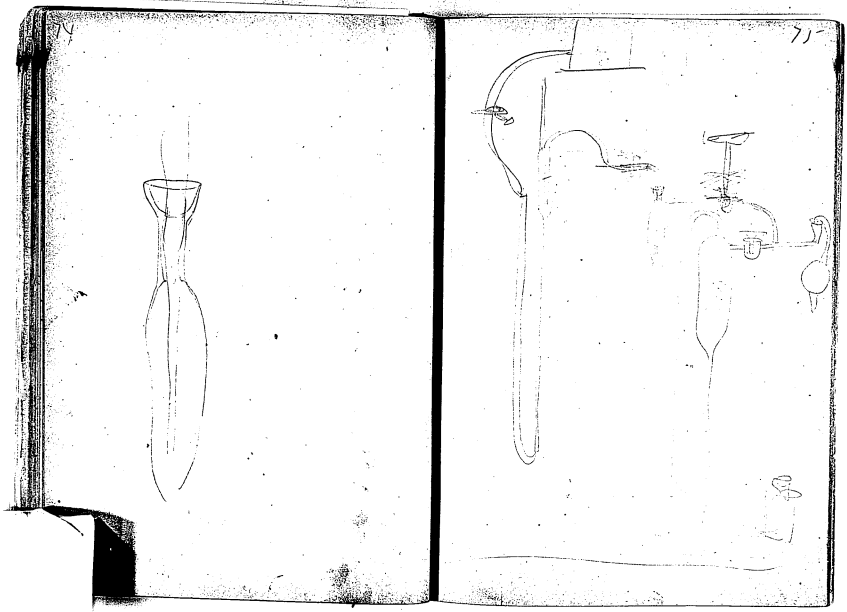
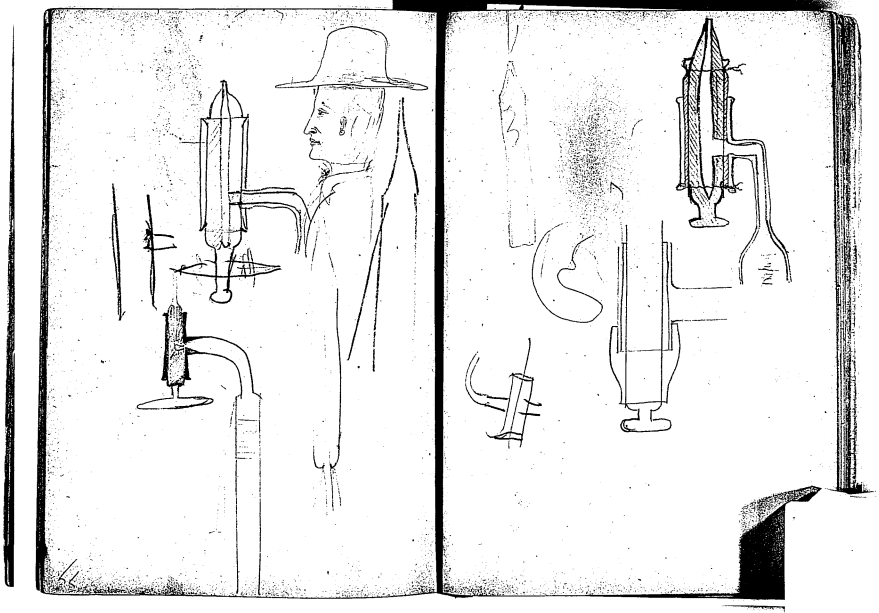
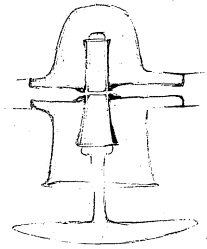
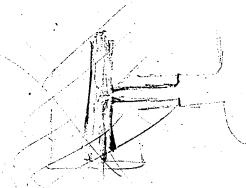
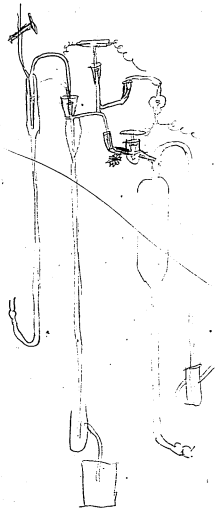




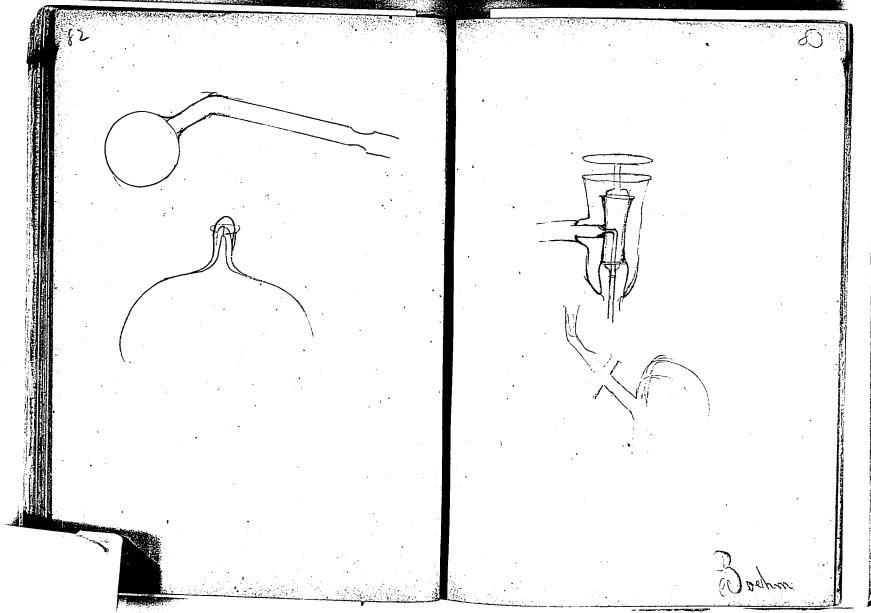


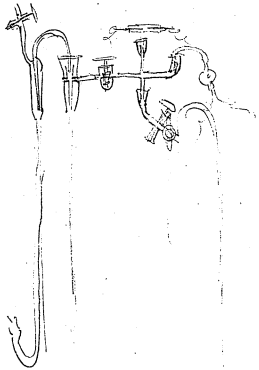


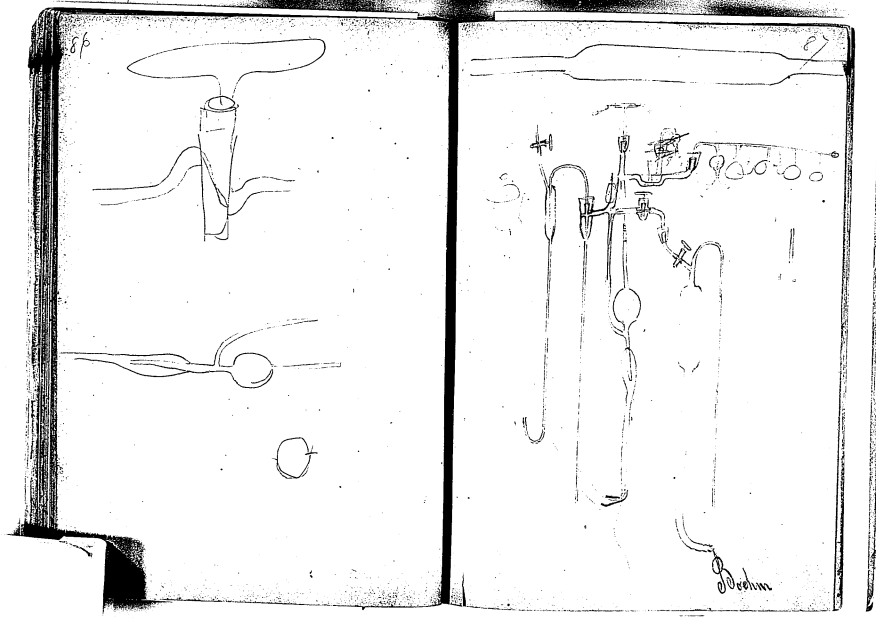


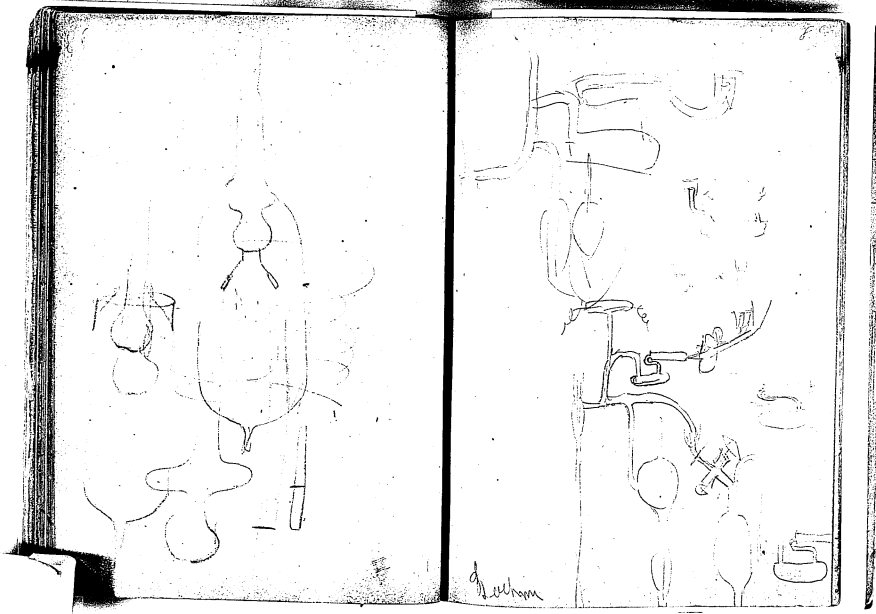


Beehm

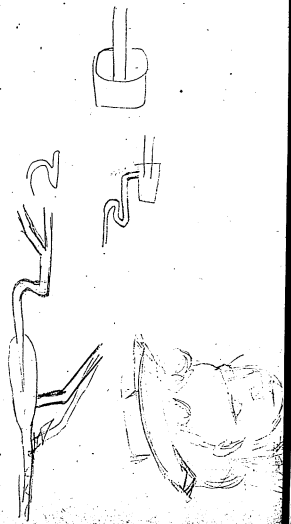





Bechim



92



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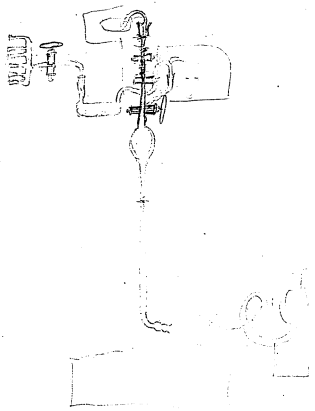
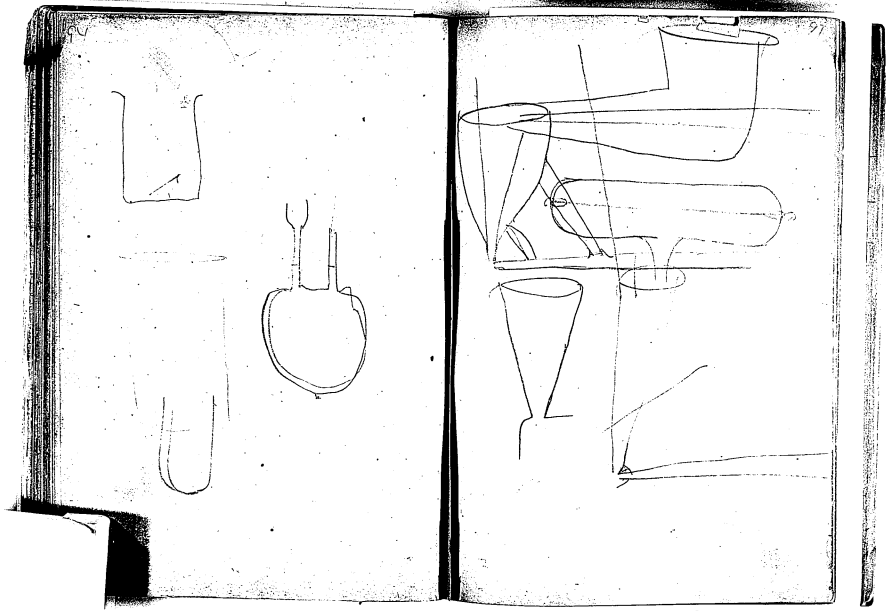
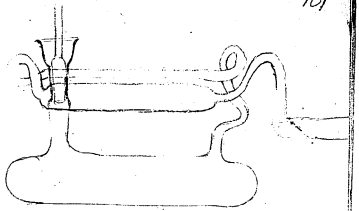
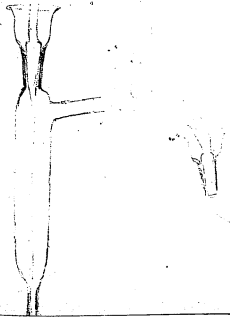
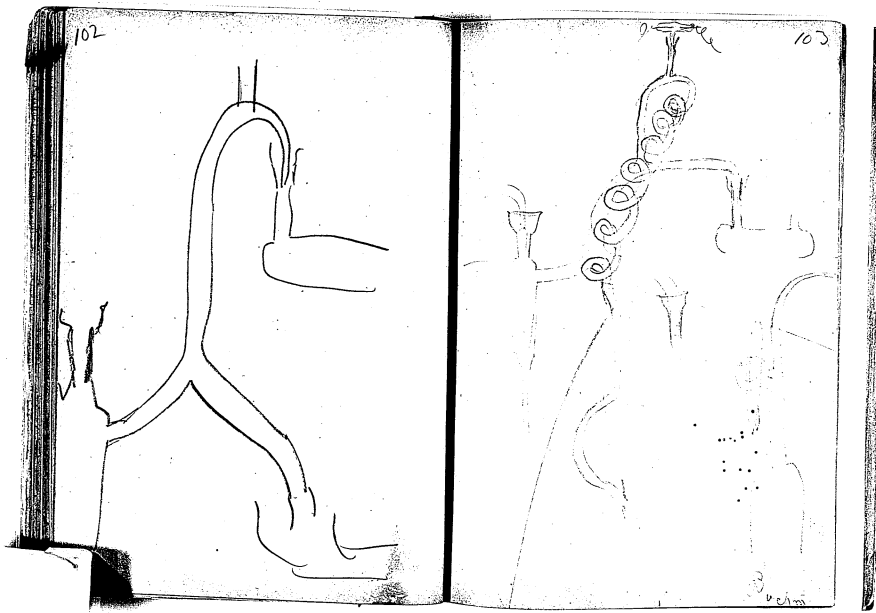


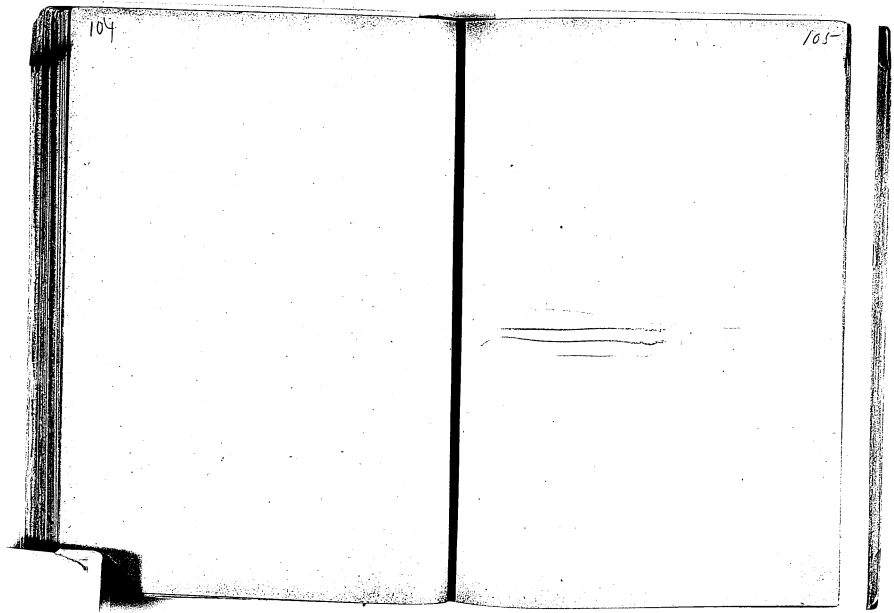
Feiffer pump








102
103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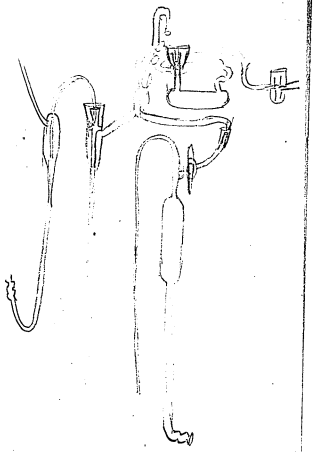
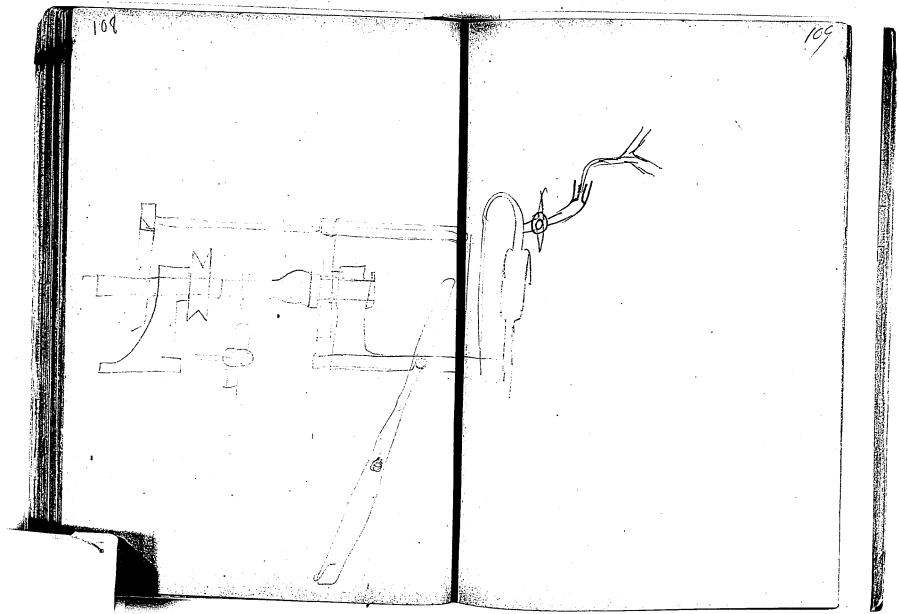
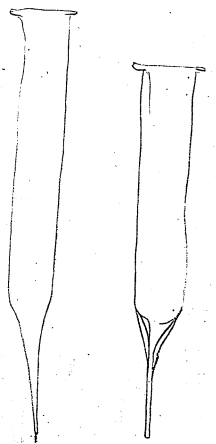
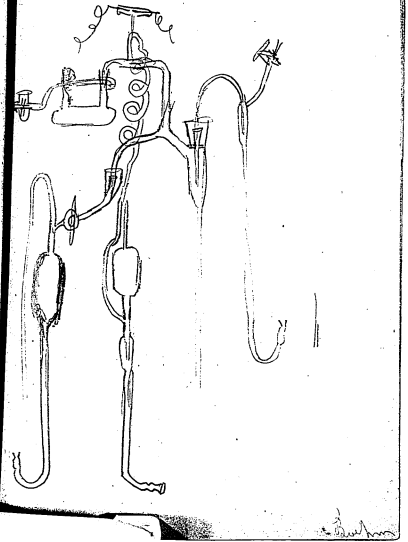
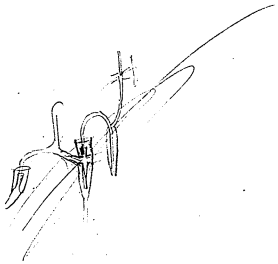
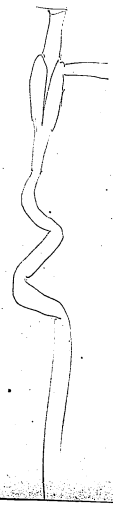










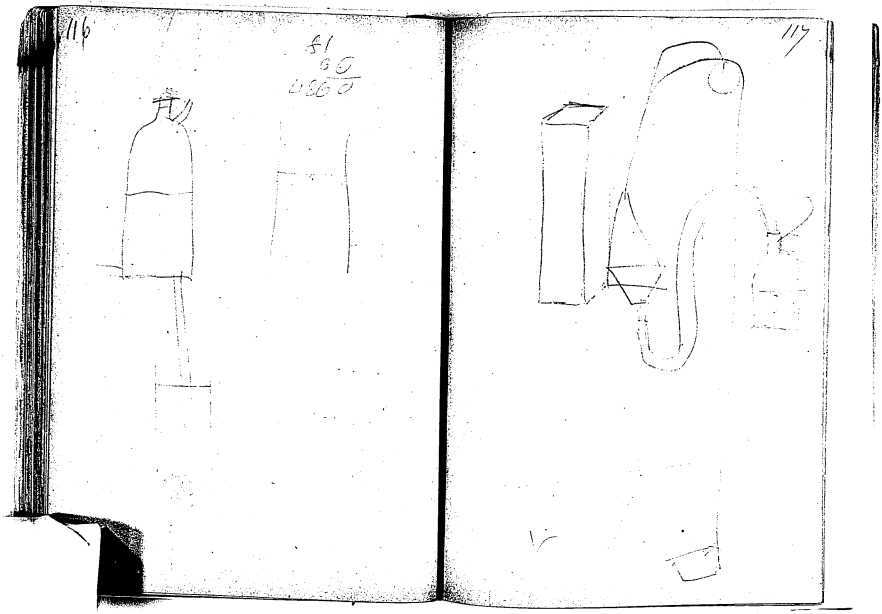


Art. bodyguard.

Scale long mm. 180.

Particolare di bandiera

Title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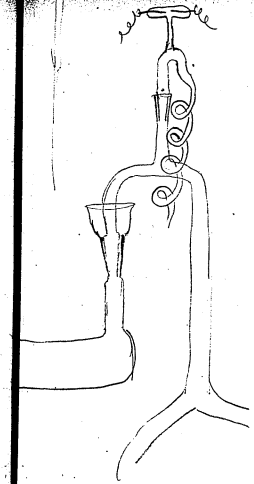
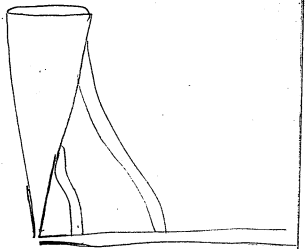
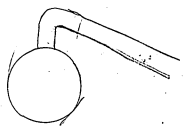
117







} celkem 6,112 mg. měřený 3,896 : 6 : 2,586 = 0,10828

1,188 mg

13,896 : 1,2586 = 0,1146

140,855

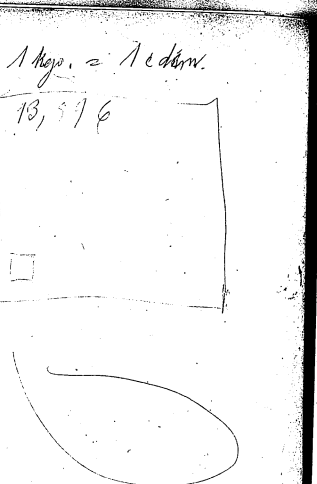
2813,896 : 6,112 = 460,2

13,396 : 23,14 = 1146,235

126

1 kgw. = 1 cdm.

13,596



127

0,090 mg

0,868 g

868 mg

3000,010 mg

60,044 mg

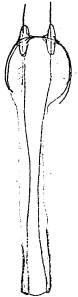
227,653 ??

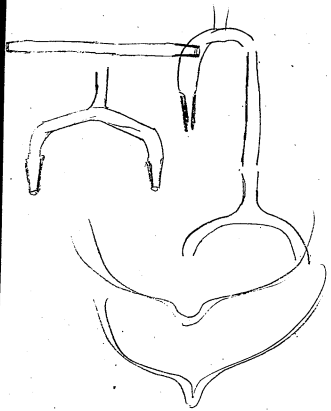
0,090
0,868
3000,010
3000,968

13,596 : 0,090880 = 0,00661
81576
84240
81526
366480
13596
13044

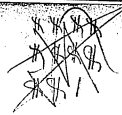
13,596 : 0,868 = 0,0638
81576
52340
49788
114520
108528
5992

13,596 : 3000,010 = 220,653
27192
28081
27192
88900
81576
73241
67980
52600
40428





L. H. Bochm



1114
146
1894

85,488
6,628
78,860

0,146 gr. : 13.596 : 0,1460 = 0,010741

13596
11[illegible]
108468
[illegible]

1,694 gr. : 13.596 : 1,8940 = 0,13921

13596
43440
40788
[illegible]
34102
[illegible]

233,808 cubic cm.

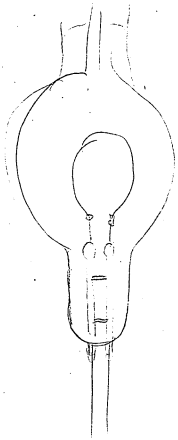
3168,855 gr.

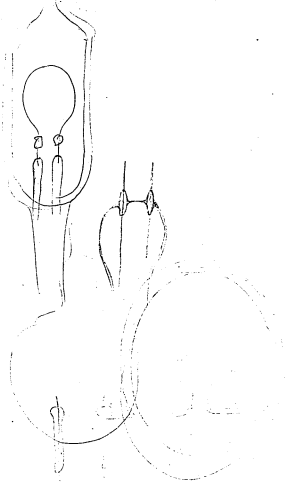
13.596 : 3.168.855 = 233,80881

24192
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

233,8081 - 439.65
0,1321 - 40788
0,0128 - 51.465
Total 233,9510 c. - 40728
10980
108468
[illegible]
108668
143 20

Pump № 3





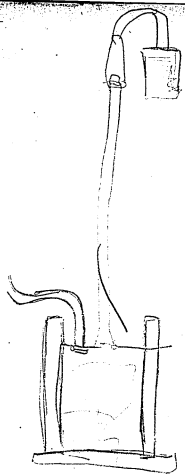
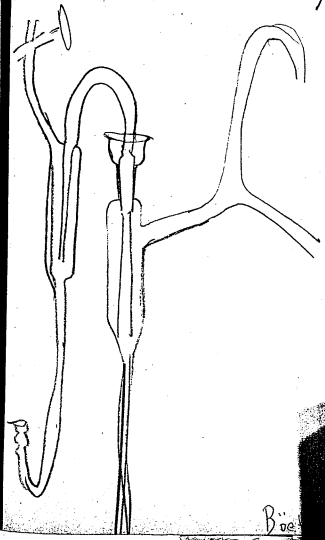
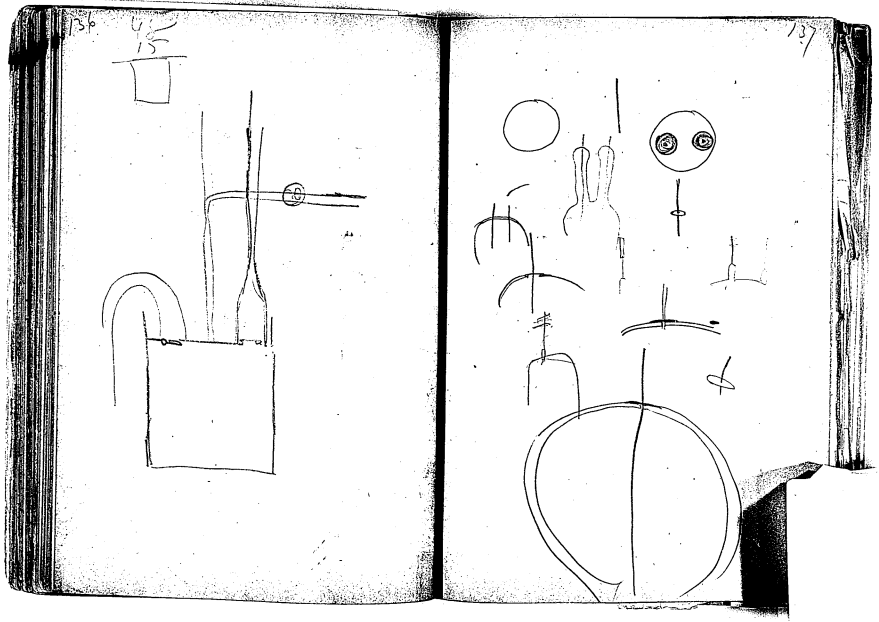
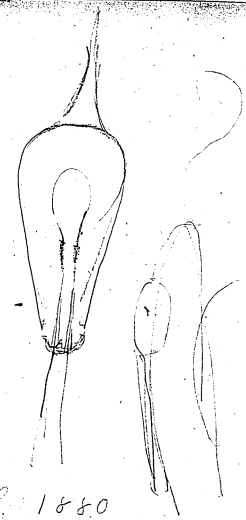


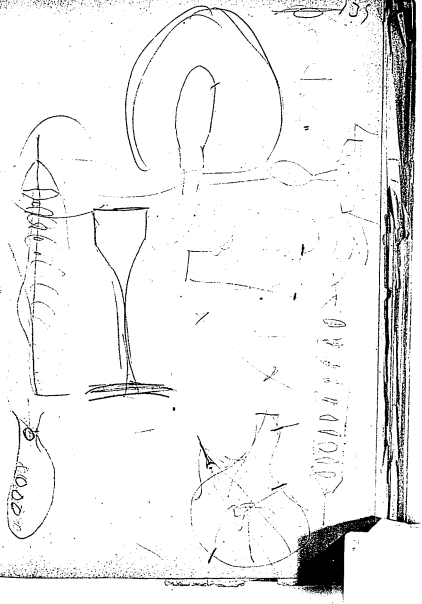
Fig. 1–2

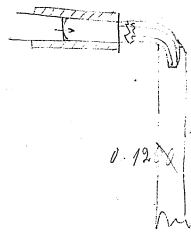



136
45
15
137



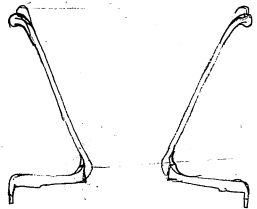
J. S. 1880

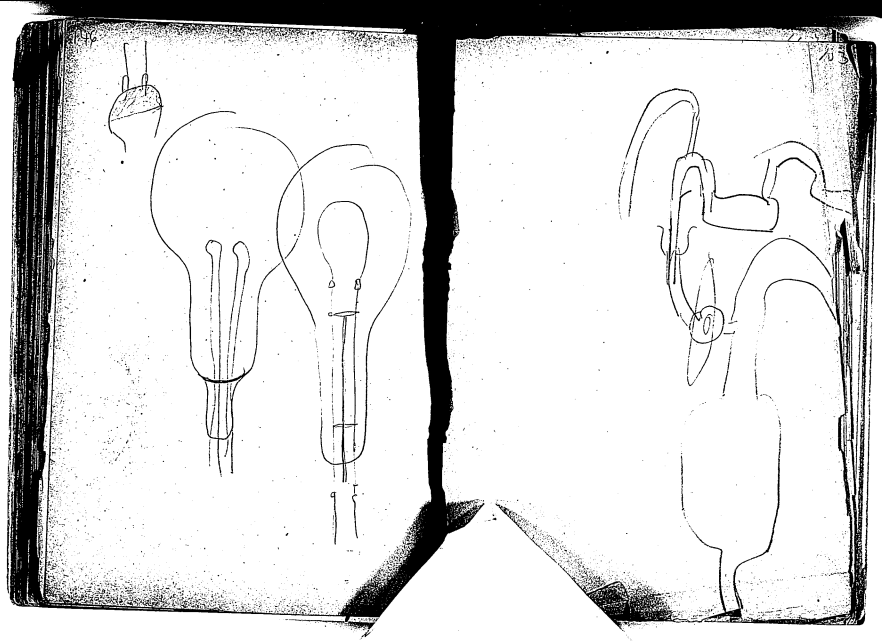


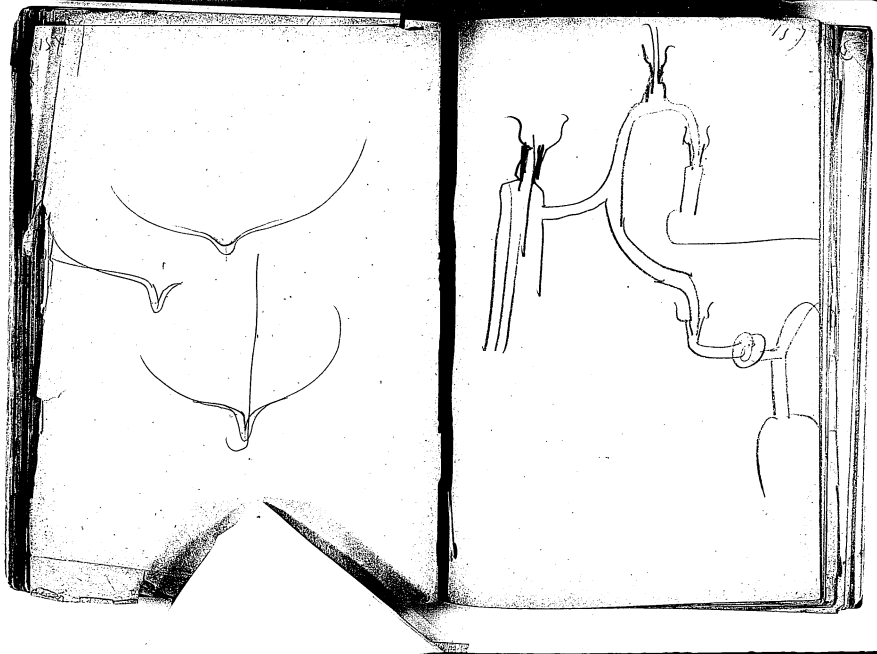


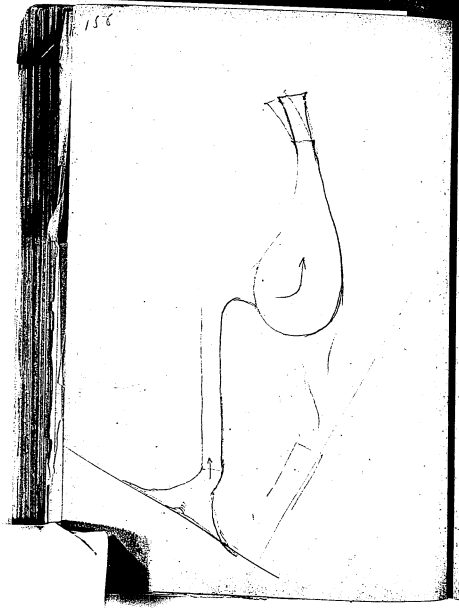
$\frac{3.20}{152,000} = \frac{1}{50,500}$

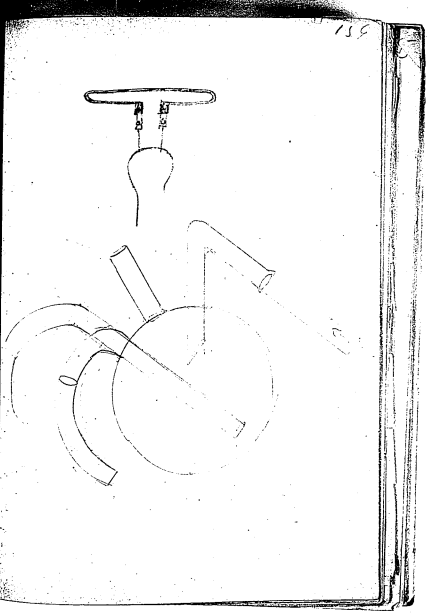
y = atmospheric pressure in lamps.

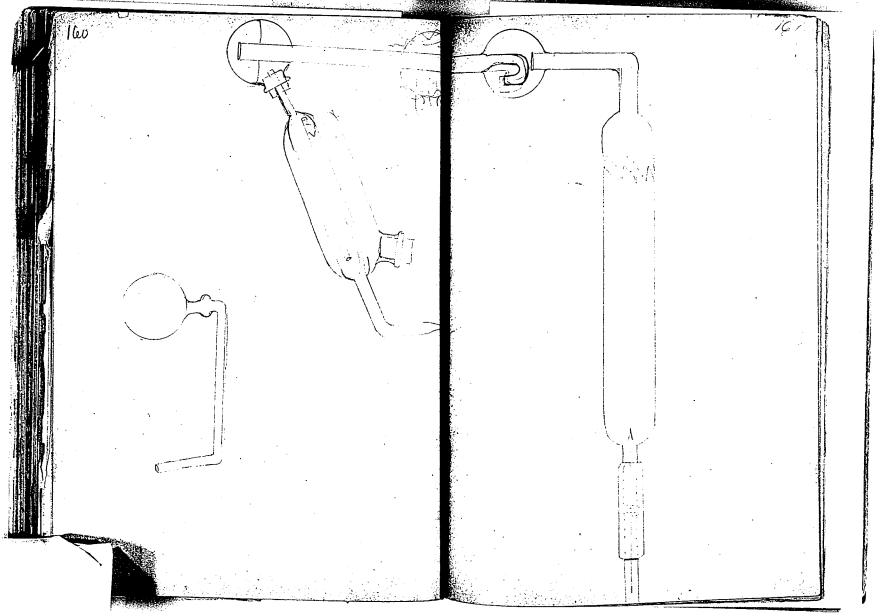


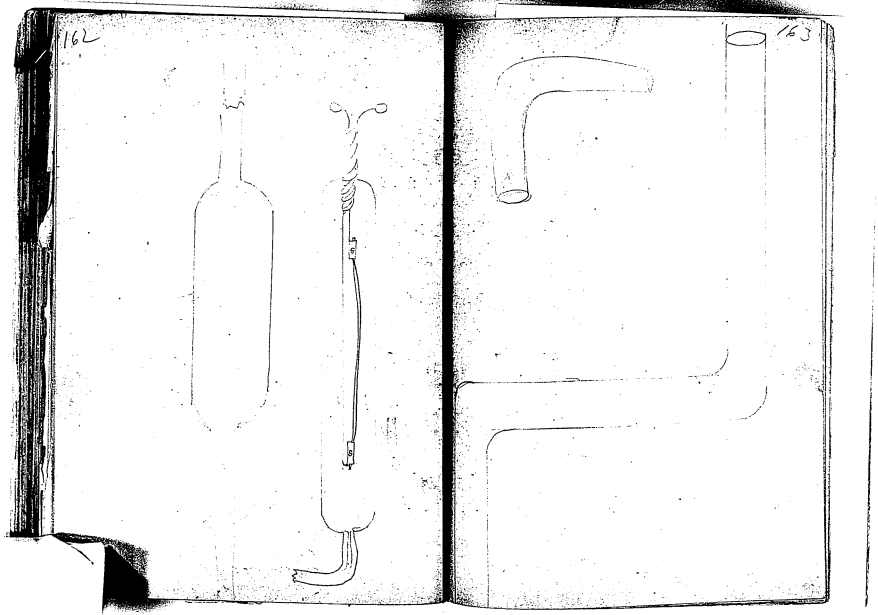


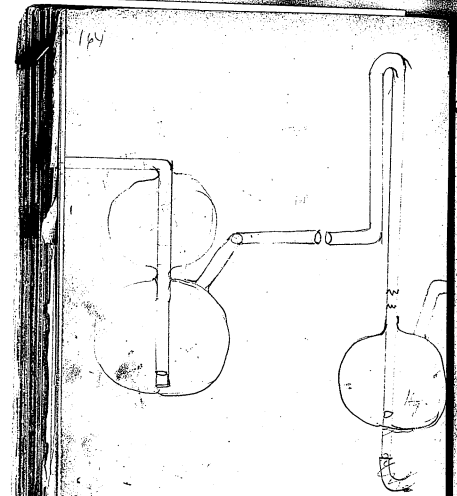


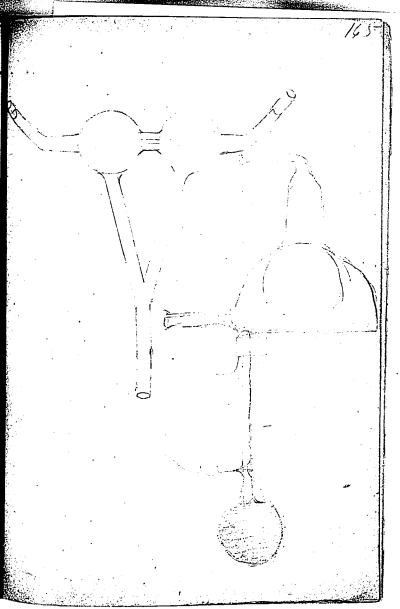


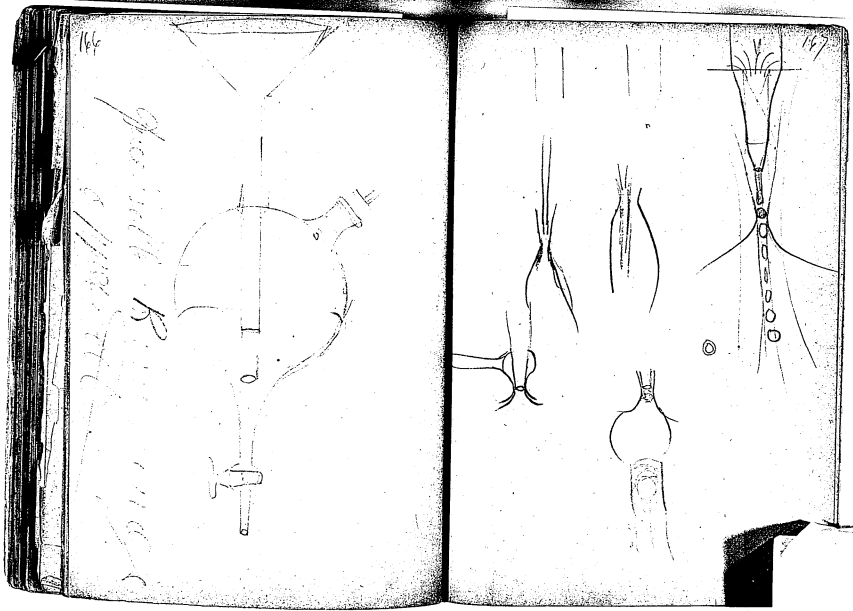





162
163



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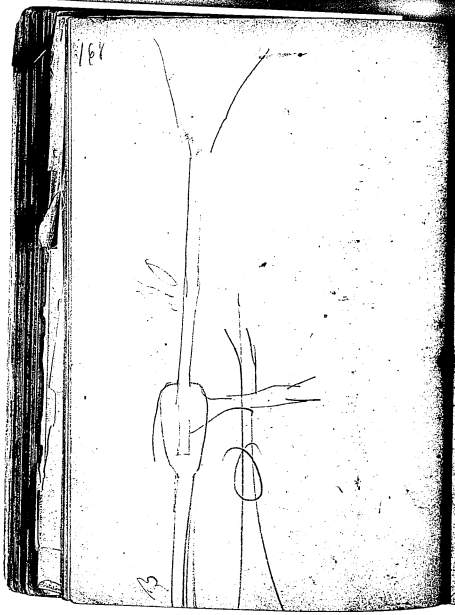
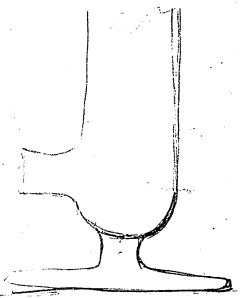
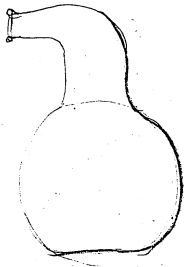
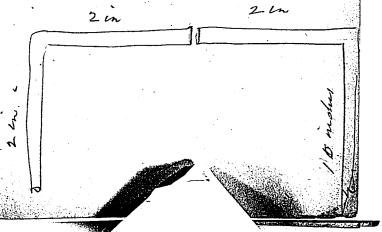
167

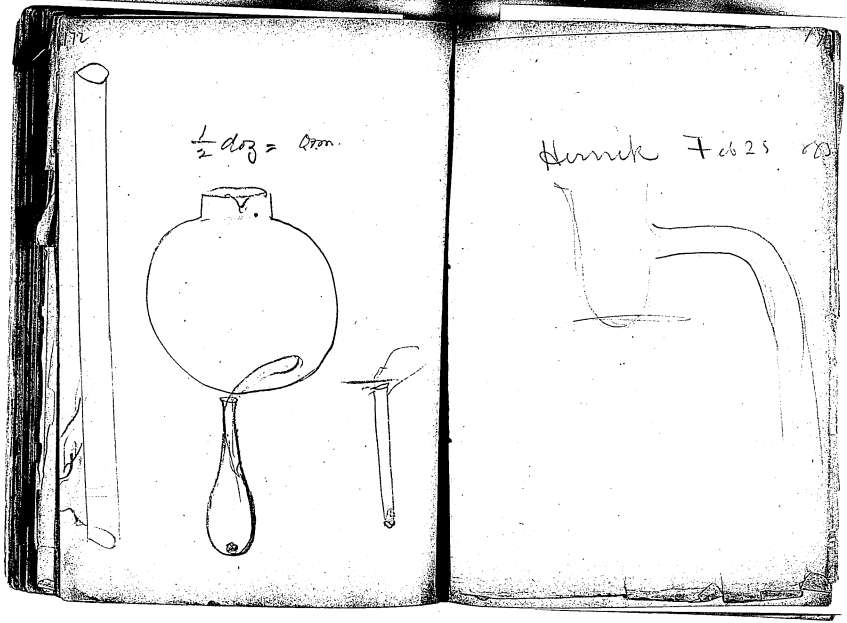


Tube 26 inches long
Chance for rubber bulb
tube on end

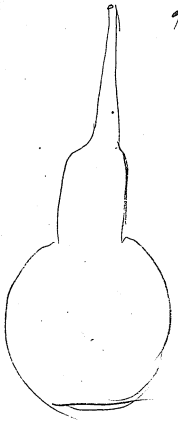




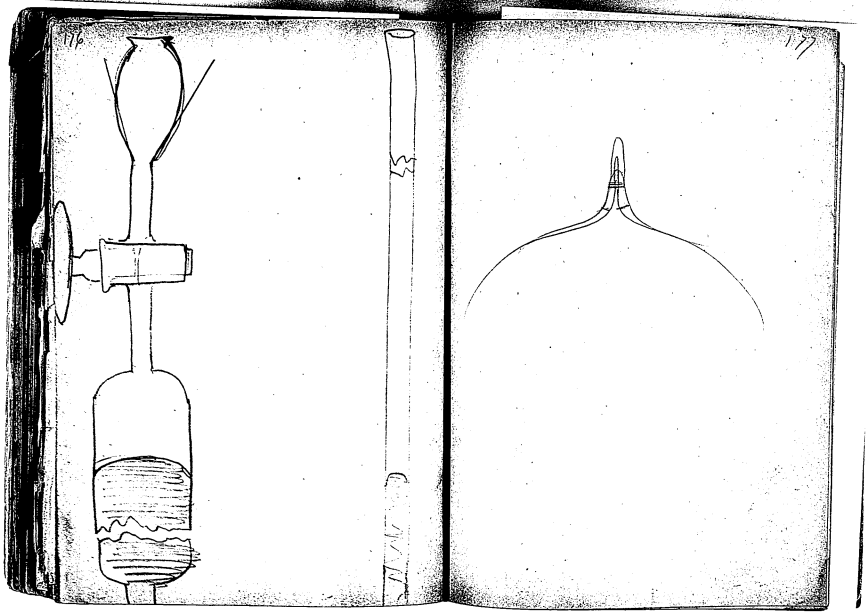

2 in
2 in
2 in
1 1/2 inches

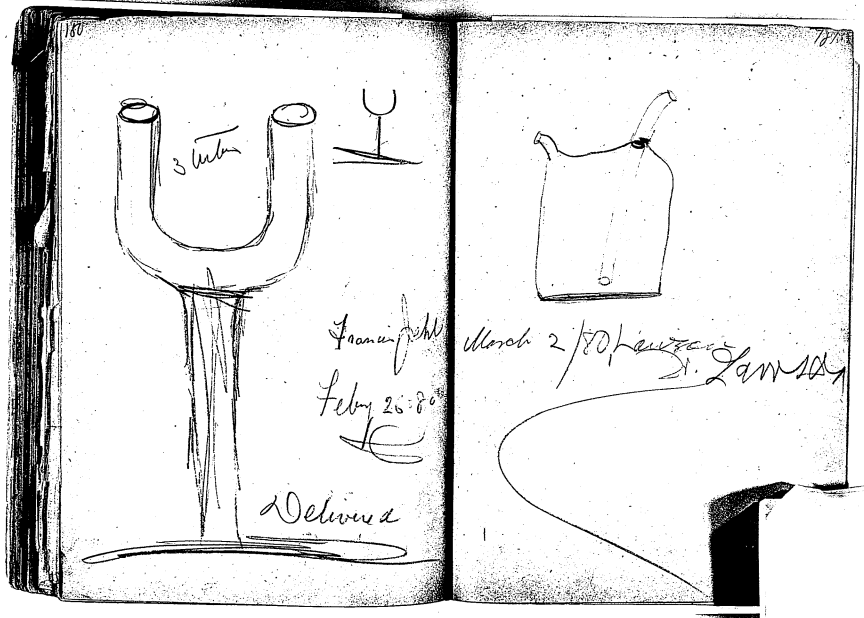

½ dag = 0,5 gram.

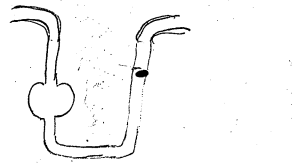
Lawson Feb. 2-6
or any other month



2 doz Offm.



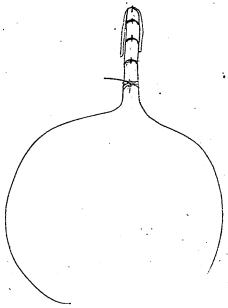

180
3 Tubes
Feby 26: 80
Delivered
March 2/80
St. James

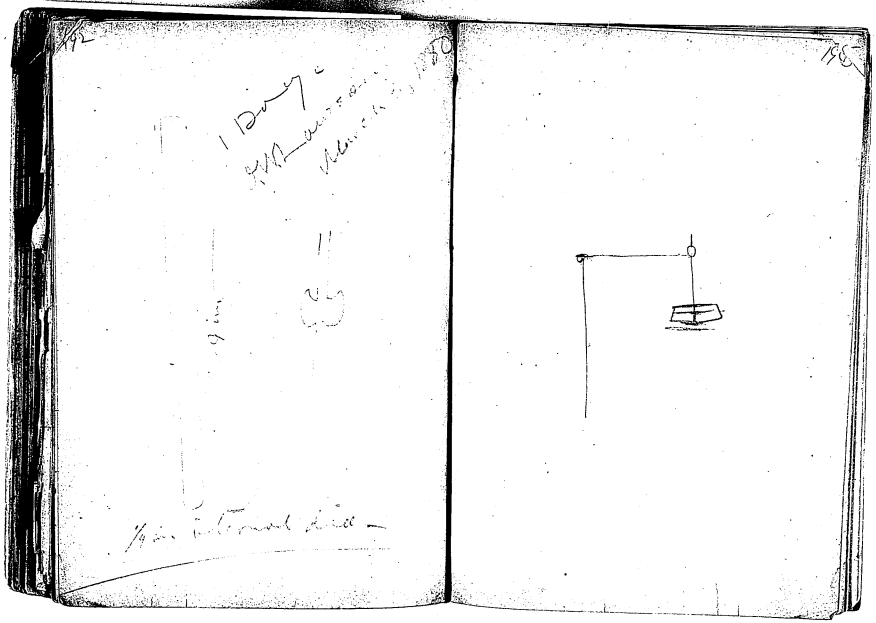


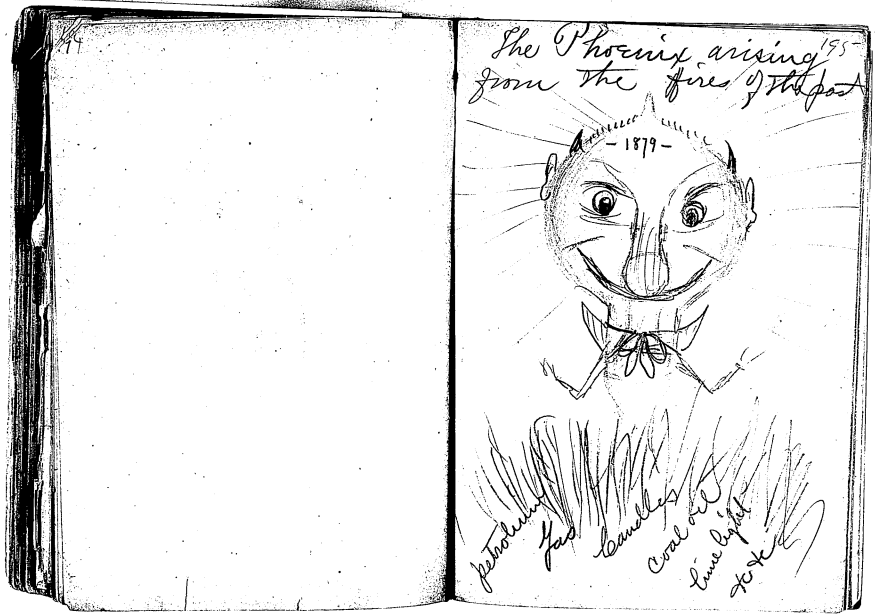
100

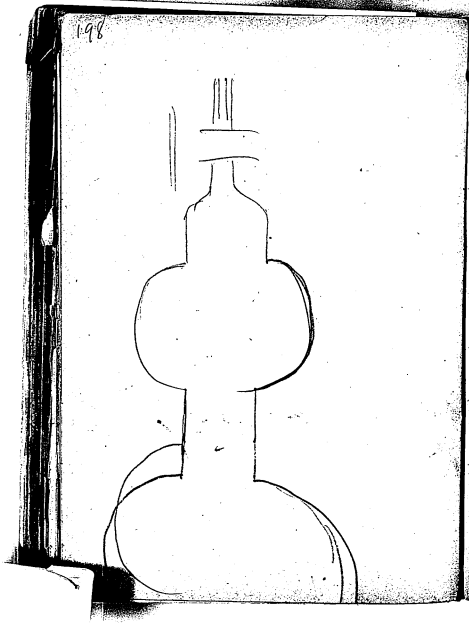
W. Thorpe

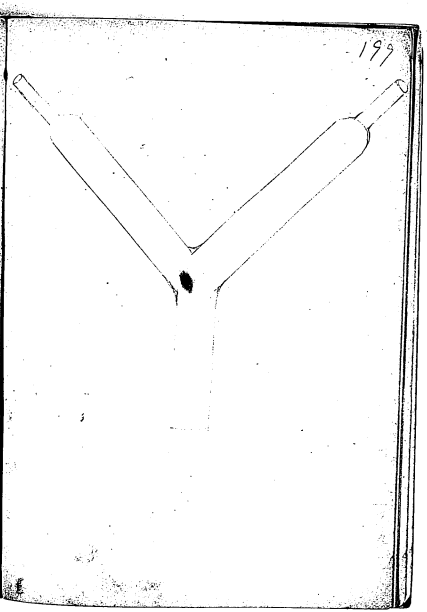
March 5th 1880

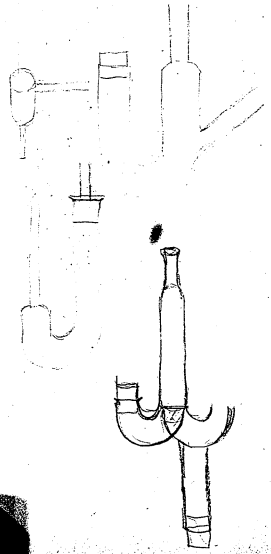


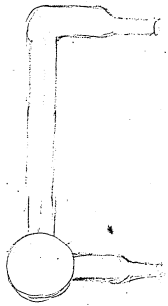


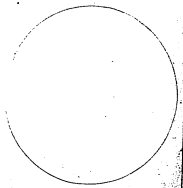

The Phoenix arising from the fires of the past
1879
petroleum
gas
candles
coal oil
time bright

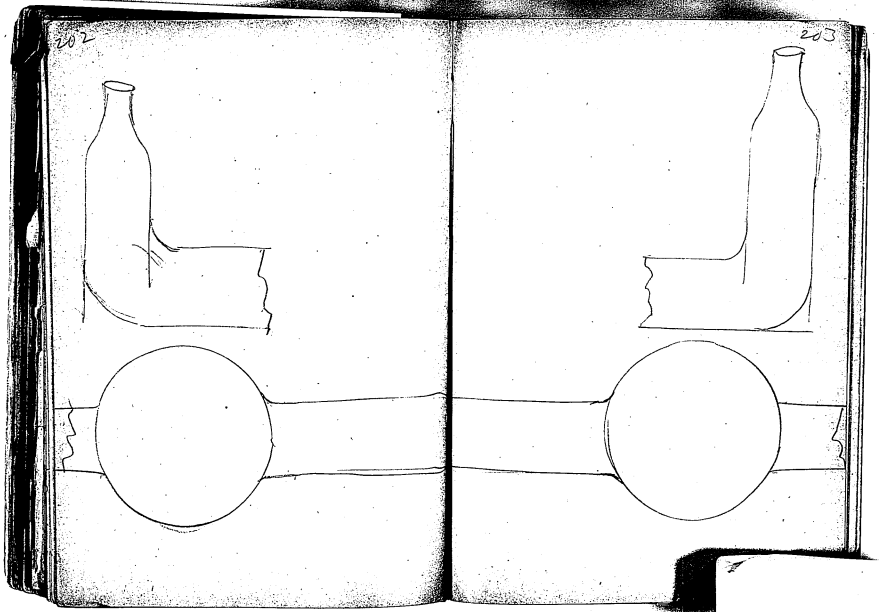


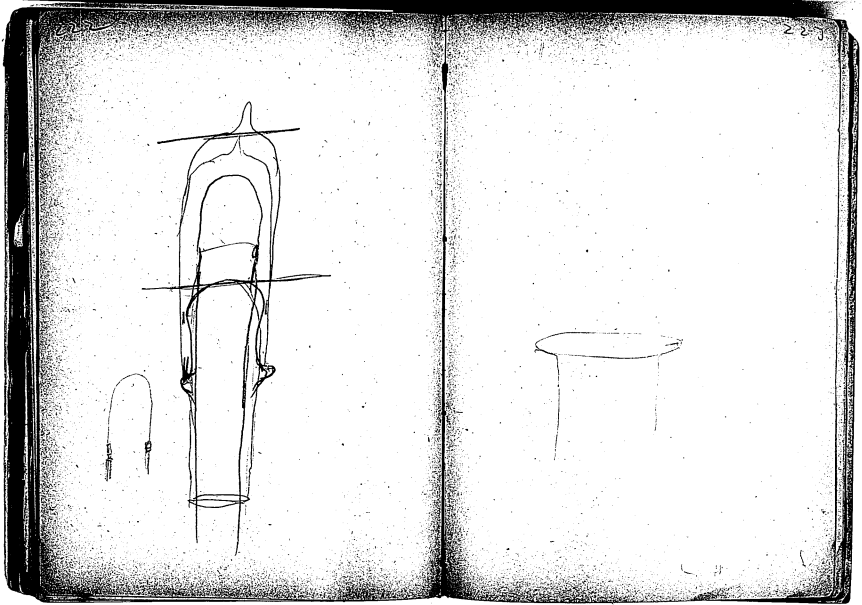









202
203



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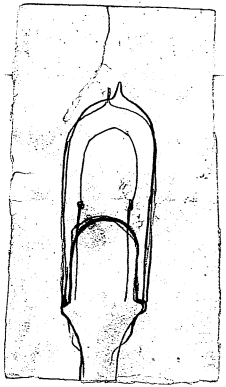

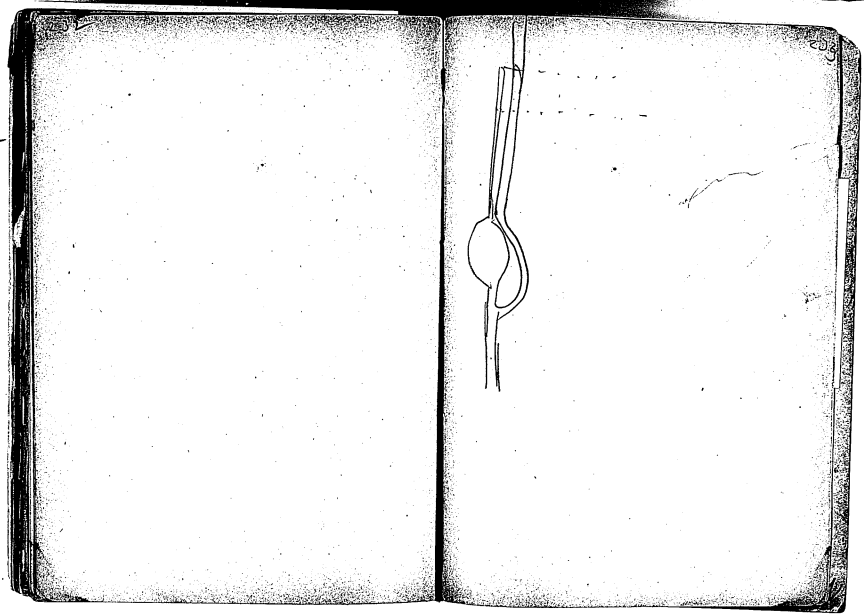

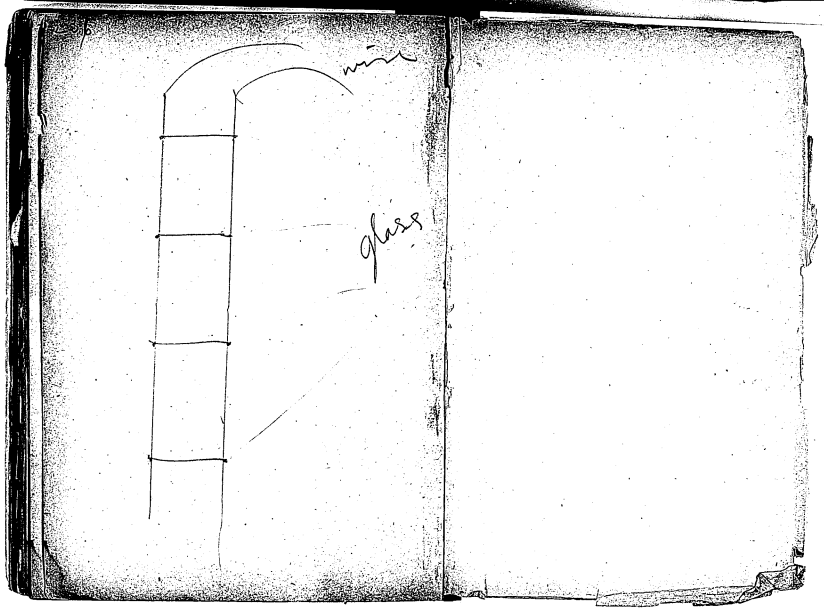
mica
glass

Iodine Conductor

Dry sodium put in
sealed tube with platina
wires each end fused
when fused bottle has
passed through to dry
Iodine

Another man says it
not true

No 36